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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/495,447	01/31/00	NIWA	S 1832/40

EXAMINER

023838
KENYON & KENYON
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WASHINGTON DC 20005

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ART UNIT	PAPER NUMBER
3613	5

BURCH, M

DATE MAILED: 03/28/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/495,447	NIWA, SATORU	
	Examiner	Art Unit	
	Melody M. Burch	3613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 January 2000* is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the communication through a local area network as claimed in claim 22 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

2. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect can be deferred until the application is allowed by the examiner.

Specification

3. The disclosure is objected to because of the following informalities:

- The summary of the invention is written in a format similar to claim format with the word mode being substituted for the word claim. The use of claim format in the specification is improper;
- On pg. 59 line 24 "346" should be changed to –236--;
- On pg. 63 line 9 "303" should be changed to –302--;
- On pg. 63 line 12 "307" should be changed to –306--;
- On pg. 64 line 5 "304" should be changed to –306--;

Appropriate correction is required.

4. The abstract of the disclosure is objected to because of improper punctuation, for example, on line 5 "...brake, for thereby...". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claims 1, 2-4 19, 21 and 22. It is unclear to the Examiner whether the Applicant is claiming the combination of an electrically controlled braking system and an automobile and wheel or the subcombination of an electrically controlled braking system and its components. The wheel and automobile are recited as functional language in the preamble but are positively recited in the body of the depending claim.

Re: claim 8. The phrase "predetermined at least one of said plurality of control devices" in line 5 is unclear.

Re: claims 8 and 9. Claims 8 and 9 recite the limitation "said plurality control devices" in lines 8 and 4, respectively. There is insufficient antecedent basis for this limitation in these claims.

Re: claim 15. Claim 15 recites the limitation "both of said rear left and right control devices" in the last two lines. There is insufficient antecedent basis for this limitation in the claim.

Re: claim 17. It is unclear to the Examiner the difference between the friction member and rotor in line 5 of claim 17 from those claimed in claim 16.

Re: claim 18. Claim 18 recites the limitation "said rear brake actuator" in the last line. There is insufficient antecedent basis for this limitation in the claim.

Re: claim 19. It is unclear to the Examiner the difference between the wheels in line 4 of claim 19 from the wheel claimed in claim 1.

Re: claim 20. Claim 20 recites the limitation "said each actuator switching device" in the last line. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Frait et al. Frait et al. show in figures 1 and 7 an electrically controlled braking system 10 including an electrically controlled brake 16 for braking a wheel of an automotive vehicle, an electric power source device 86, a brake operating member 25, and a brake control apparatus 12 for controlling an electric energy to be supplied from the electric power source device to the brake, for thereby controlling an operation of the brake when

the brake operating member is operated, the brake operating member comprising: a switching device 94 disposed between the electric power source device and the brake control apparatus, the switching device being turned on for connecting the electric power source device to the brake control apparatus, in response to an operation of the brake operating member. Frait et al. also shows switching device 90 in figure 7.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 2 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frait et al. in view of European Patent to Maron et al. (corresponding to U.S. Patent 5957551 to Maron et al. as an English equivalent throughout the Office Action) and Giorgetti et al. Frait et al., show in figure 1 electrically controlled drum brakes, electrically operated actuators 22 in the form of electromagnets, a plurality of switching devices 90, 94, and electric actuator control device 92, 100. Maron et al. teach in figure 1 the use of electrically controlled disk brakes 14 which inherently consist of a rotating rotor and a friction member.

It is well known in the art that both drum brakes and disk brakes can be employed to stop or slow movement depending on the braking application. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to have modified the drum brakes of Frait et al. with disk brakes, as taught by Maron et al., in order to provide an alternate means of effecting braking action on a rotating wheel.

Also, Giorgetti et al. teaches in figure 1 the use of electric motors 17 as electric brake actuators. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the electromagnetic electric actuators of Frait et al. with electric motors, as taught by Giorgetti et al., in order to provide an alternate means of actuating the electric braking means of the electrically controlled braking system.

11. Claims 3, 4, 18, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frait et al. in view of European Patent to Maron et al.

Re: claims 3, 4, 18, 21, and 22. Frait et al. show in figure 1 electrically controlled drum brakes, electrically operated actuators 22, and electric actuator control device 92, 100. Maron et al. teach in figure 1 the use of electrically controlled disk brakes 14 which inherently consist of a rotating rotor and a friction member actuated to press the rotor.

It is well known in the art that both drum brakes and disk brakes can be employed to stop or slow movement depending on the braking application. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the drum brakes of Frait et al. with disk brakes, as taught by Maron et al., in order to provide an alternate means of effecting braking action on a rotating wheel.

Maron et al. teach in figure 1 the use of electrically operated front brake actuator 12 on the upper right-hand side of the figure and an electrically operated rear brake actuator 12 on the upper left-hand side, a front brake power source 8 on the right-hand side of the figure, and a rear brake power source 8 on the left-hand side of the figure. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the electrically controlled braking system of Frait et al. with a front and rear brake electric power sources, as taught by Maron et al., in order to provide a prevent a total loss of braking capacity at both the front and rear sections of a vehicle in the case of failure of one of the electric power sources. (Re: claim 18)

Frait et al., as modified, teaches the use of a brake control apparatus including a main control device 74, 70 and an actuator control device 92, 100. See Frait et al. figure 1. (Re: claim 21)

Providing a redundant environment in brake applications is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the electrically controlled braking system of Frait et al. to have included electrical power sources in parallel in order to provide an alternative level of redundancy to prevent the loss of brake actuation due to the failure of one of the switching device. (Re: claim 24)

Examiner notes that communication through local area network as a controller interface is well known in the art. (Re: claim 22)

12. Claims 6-8, 11-13 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frait et al. in view of Imanaka.

Re: claims 6-8 and 11-13. Imanaka teaches in figure 1 the use a plurality of a plurality of brake control devices 11 and 12 which are commonly known to principally constitute a computer. Imanaka also teaches the use of a plurality of electric power sources labeled power source and battery BDC in figure 1. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the electrically controlled braking system of Frait et al. with a plurality of control devices and electric power sources, as taught by Imanaka, in order to provide a level of redundancy in the case of failure of one of the control devices or electric power sources. Also, in view of the teachings of Imanaka, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the electrically controlled braking system with at least three control devices in order to provide a particular level of redundancy dictated by the particular braking application.

Re: claim 29. Imanaka teaches in the abstract the use of a mechanical friction brake which is brought into a connecting state when an electrical abnormality with the electric brake occurs. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Frait et al with a mechanical operated brake triggered to a connected state during abnormal states in the electric brake, as taught by Imanaka, in order to provide a reliable alternate means of effecting braking action of a wheel in the event of failure of the electric brake. This expedient is another of example of providing a level of redundancy in the braking system.

13. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frait et al. in view of Imanaka as applied to claims 1 and 6 above, and further in view of JP 5-158742. JP 5-158742 teaches in lines 1-3 of the constitution provided with the English translation of the abstract the use of devices for detecting an abnormality of the actuator control device. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the electrically controlled braking system of Frait et al., as modified, with an abnormality detecting device, as taught by JP 5-158742, in order to provide a means of securing the safe operation of the brake system.

14. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frait et al. in view of European Patent to Maron et al. as applied to claims 1 and 21 above, and further in view of JP 5-158742. JP 5-158742 teaches in lines 1-3 of the constitution provided with the English translation of the abstract the use of devices for detecting an abnormality of the actuator control device. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the electrically controlled braking system of Frait et al., as modified, with an abnormality detecting device, as taught by JP 5-158742, in order to provide a means of securing the safe operation of the brake system.

15. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frait et al. in view of European Patent to Maron et al. and Imanaka. Frait et al. show in figure 1 electrically controlled drum brakes, electrically operated actuators 22, and electric actuator control device 92, 100. Maron et al. teach in figure 1 the use of

electrically controlled disk brakes 14 which inherently consist of a rotating rotor and a friction member actuated to press the rotor.

It is well known in the art that both drum brakes and disk brakes can be employed to stop or slow movement depending on the braking application. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the drum brakes of Frait et al. with disk brakes, as taught by Maron et al., in order to provide an alternate means of effecting braking action on a rotating wheel.

Maron et al. teach in figure 1 the use of electrically operated front brake actuator 12 on the upper right-hand side of the figure. Imanaka also teaches the use of a plurality of electric power sources labeled power source and battery BDC in figure 1. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the electrically controlled braking system of Frait et al. with a plurality of control devices and electric power sources, as taught by Imanaka, in order to provide a level of redundancy in the case of failure of one of the control devices or electric power sources.

Allowable Subject Matter

16. Claim 14, 15, 20, and 25-28 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents: 5957246 to Suzuki, 5785393 to McGrath et al., 5462342 to Goebels, 5810454 to Prinzler et al., 4658939 to Kircher et al., 4812777 to Shirai, and Japanese Patent JP 4-243648 show similar inventions. U.S. Patent 5862048 teaches the use of LAN communication.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Oberleitner can be reached on 703-308-2569. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

DOUGLAS C. BUTLER
PRIMARY EXAMINER
AU 3613

3/26/01

mmb
March 23, 2001